Non-target Taxa Monitoring

Ecological Risk Containment

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"Supplementation is the use of artificial propagation in an attempt to maintain or increase natural production while maintaining the long term fitness of the target population, and keeping ecological and genetic impacts on nontarget populations within specified biological limits."

RASP 1992

Containment Objectives

≤0%

≤5%

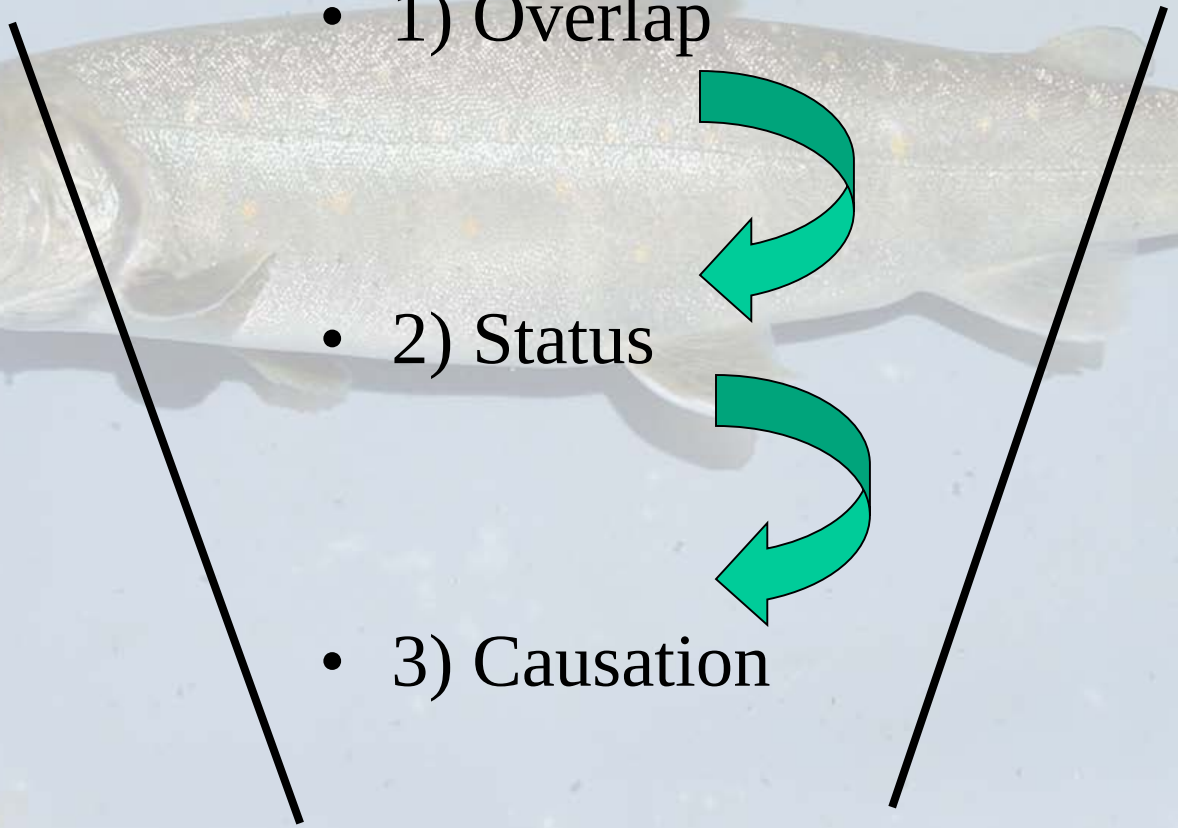
≤10%

≤40%

sustainability

Pearsons et al. 1998, BPA Report DOE/BP 64878-6

NTT Risk Containment Process :Sieve Approach



Pearsons and Temple 2007

Special thanks: BPA, YN, and EIT staff

Results Through 2007

Status of most species remain within acceptable limits

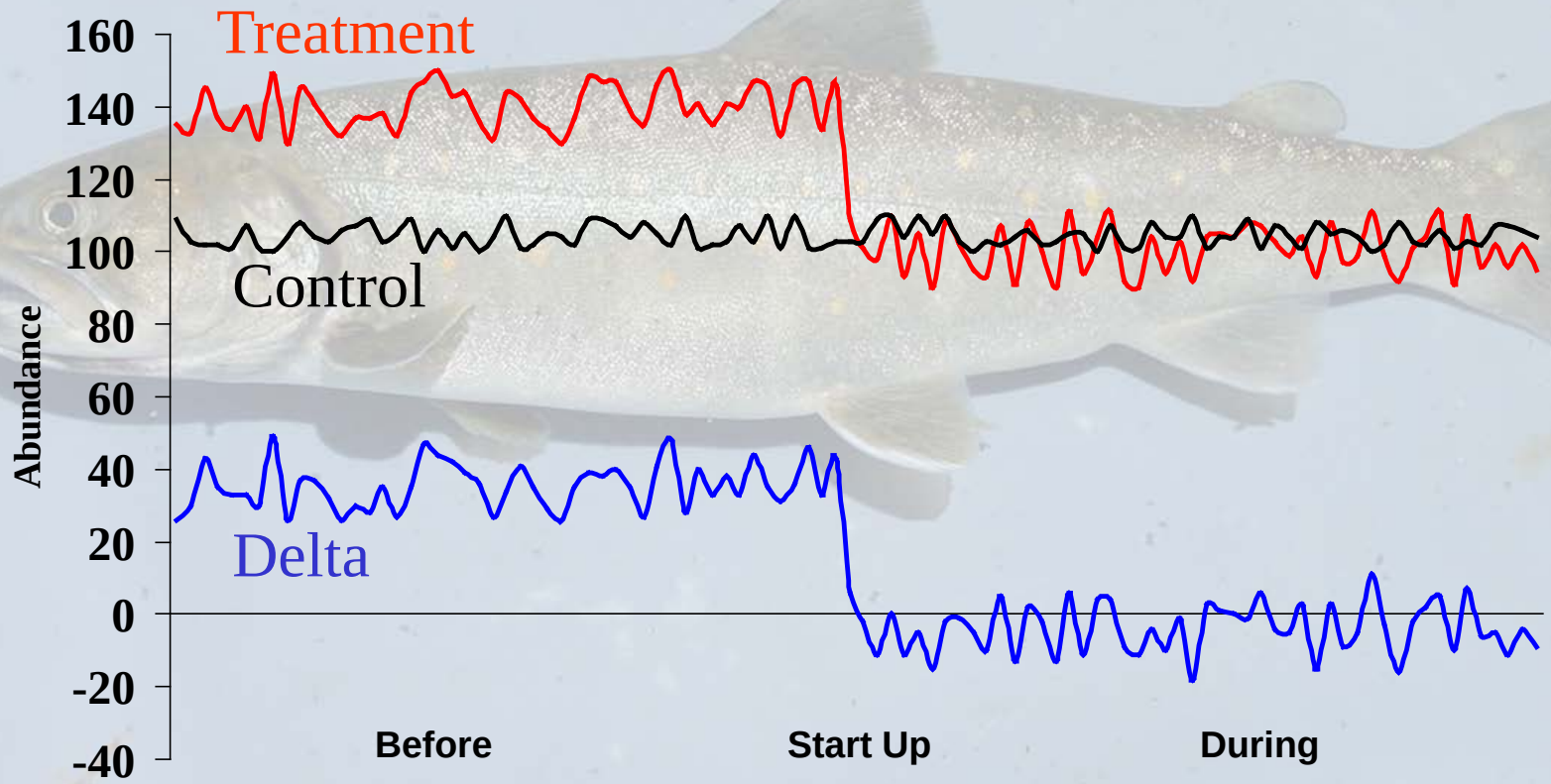
Notable Exceptions:

-Steelhead size index (main stem Yakima)

-Steelhead abundance index (Teanaway)

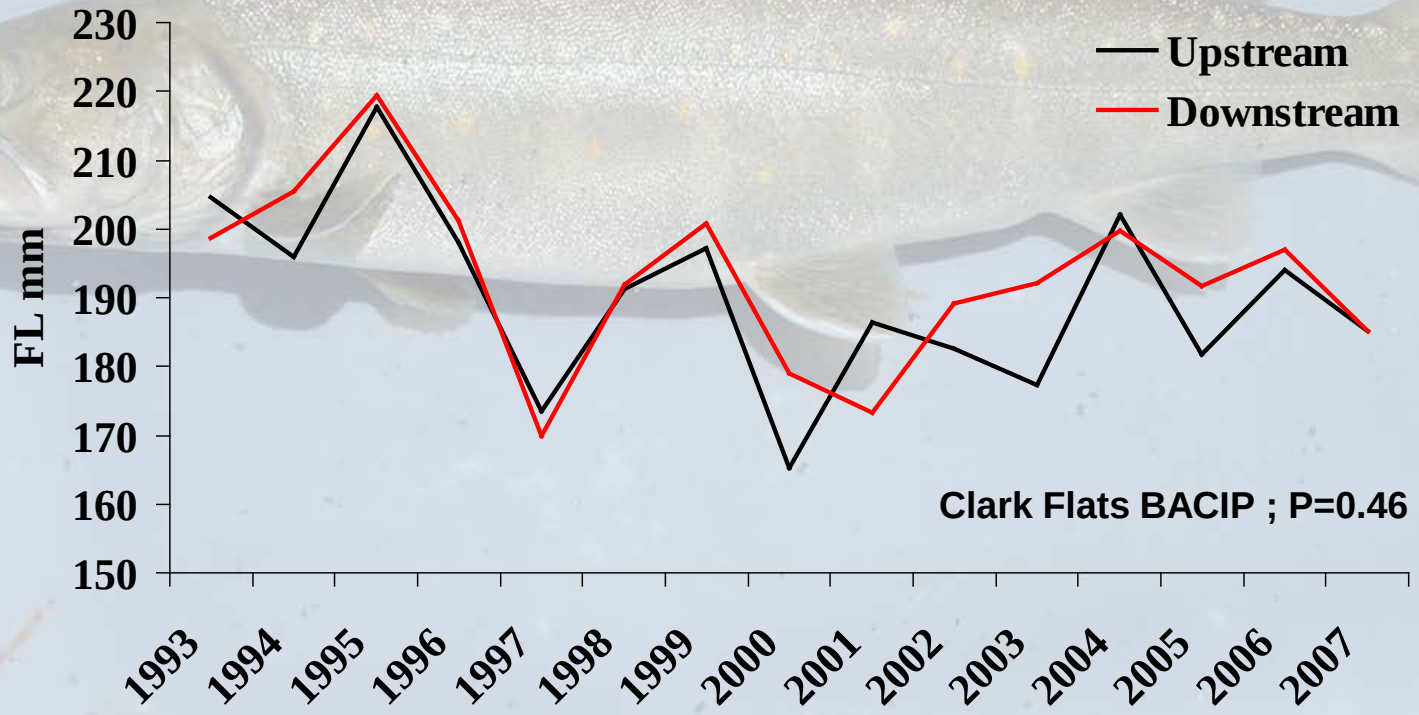
*Bull Trout

BACIP Designs

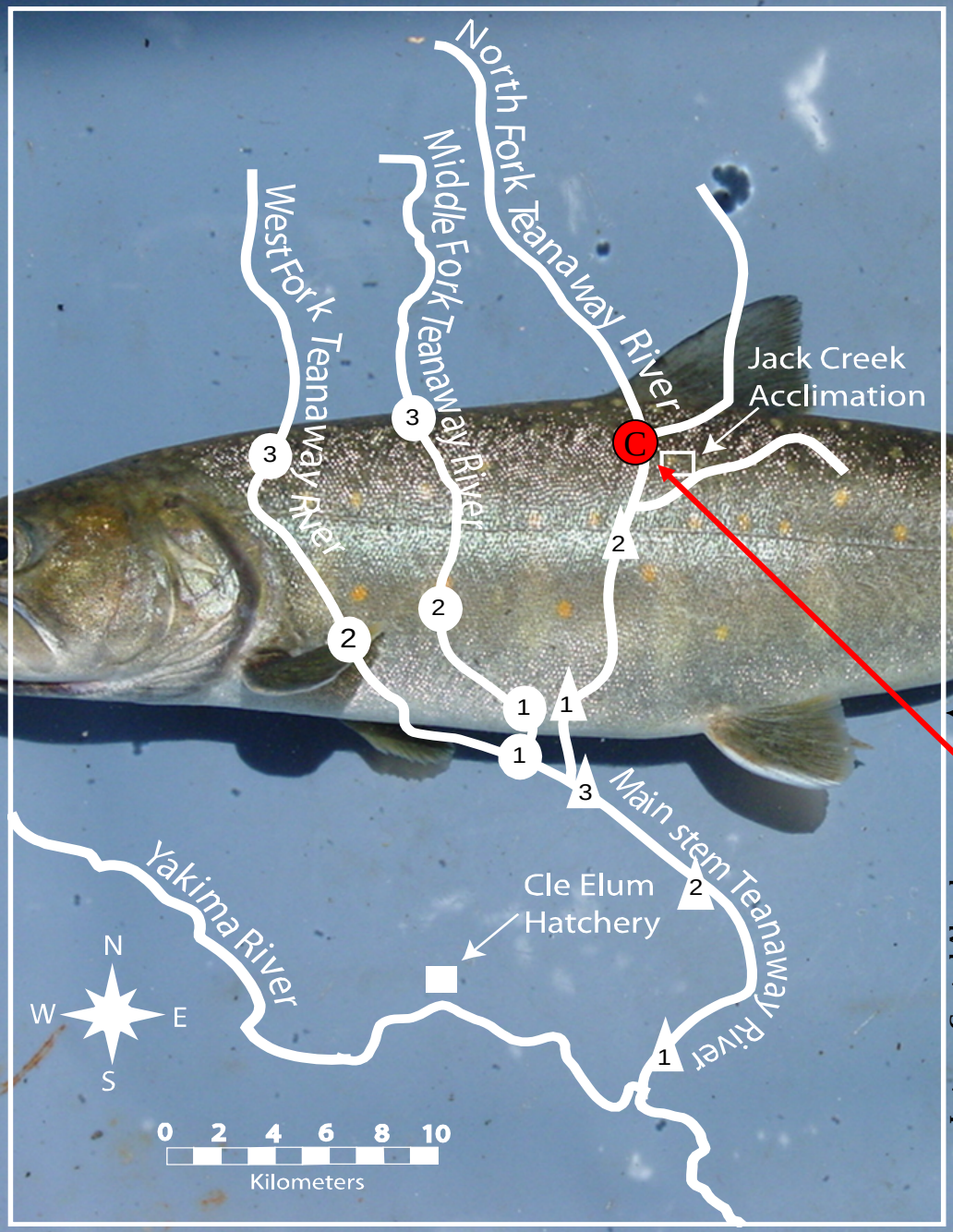


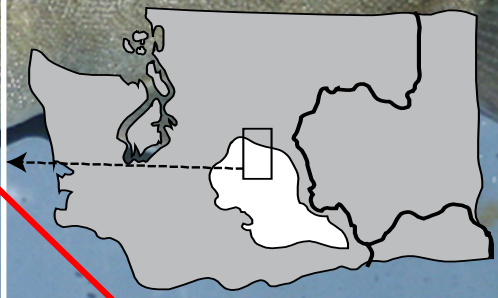
Stewart-Oaten et al. 1986

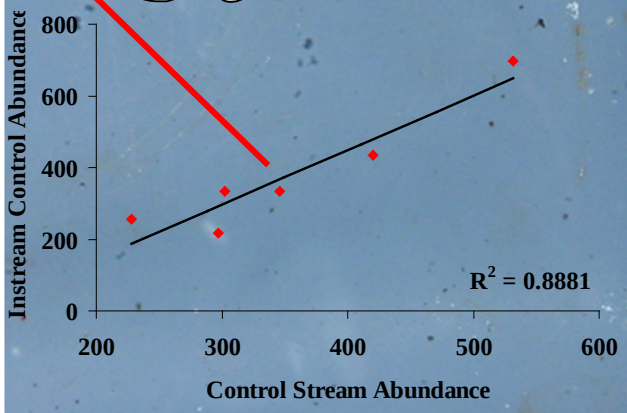
Main stem Age 1 RBT Size



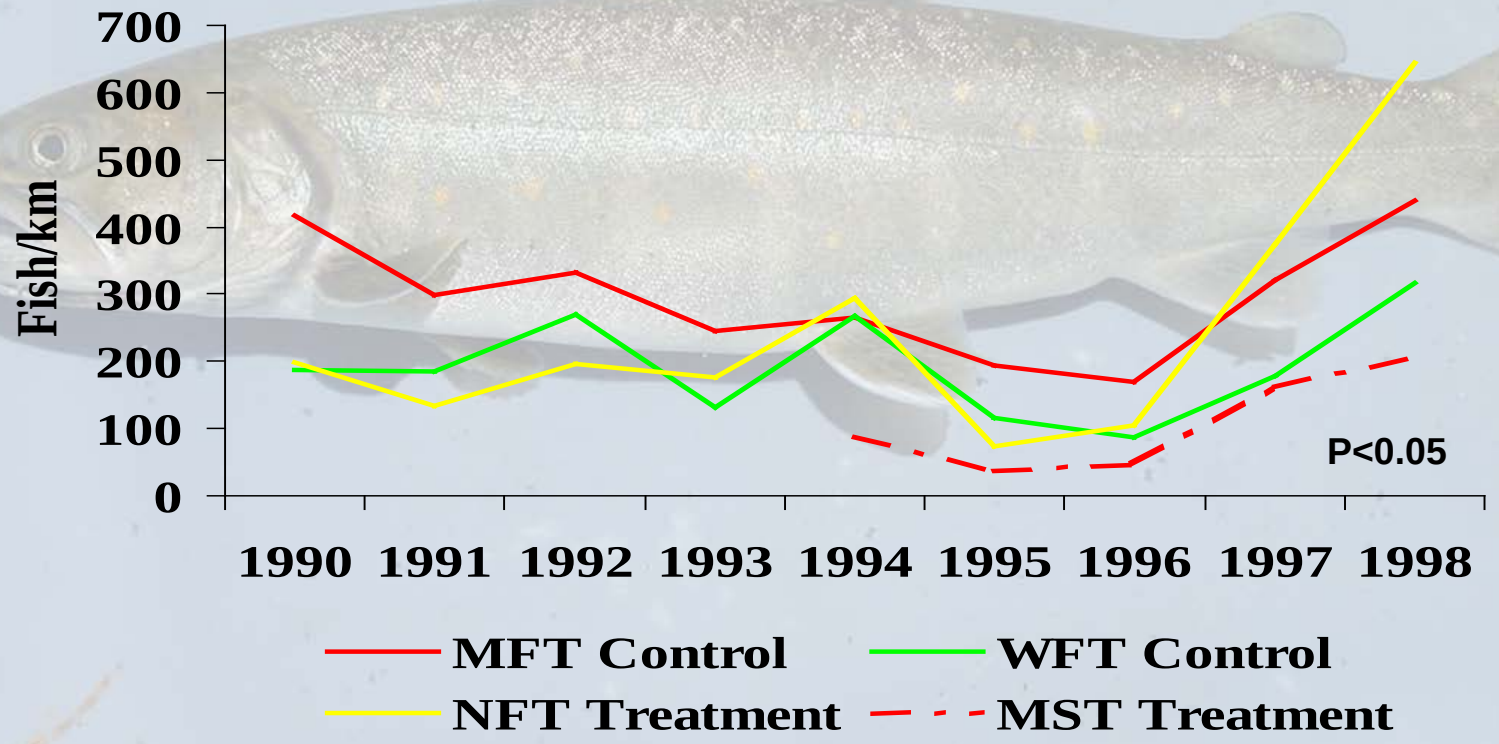
Teanaway Basin BACIP Sites







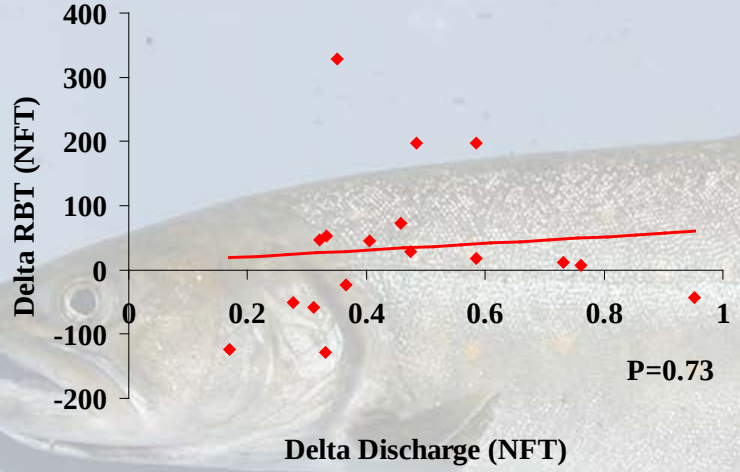
Control Stream Validation

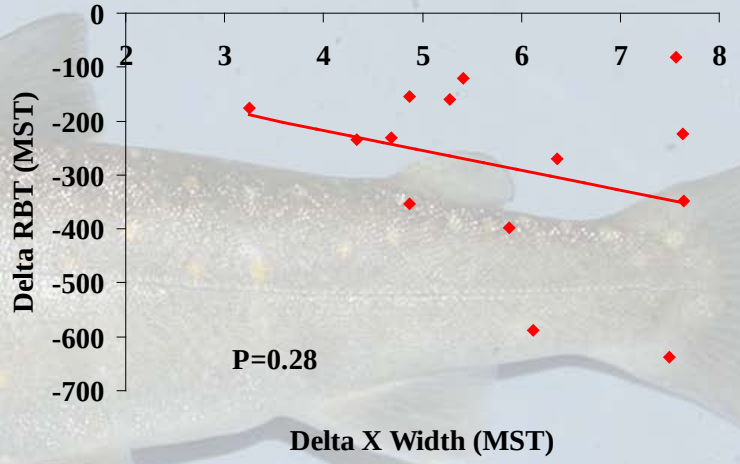


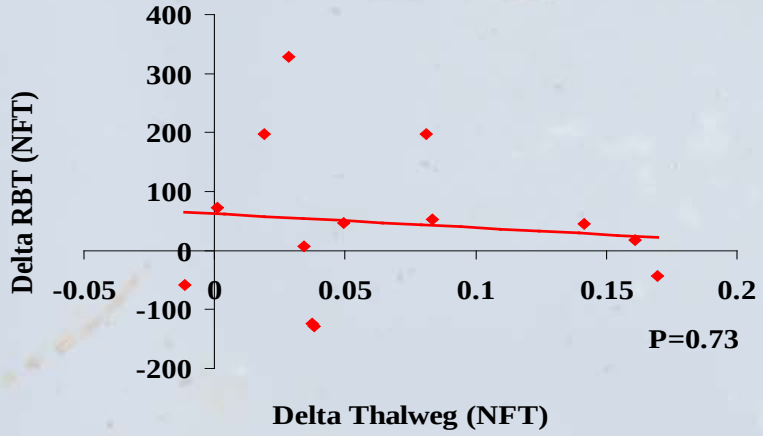
BACIP Results

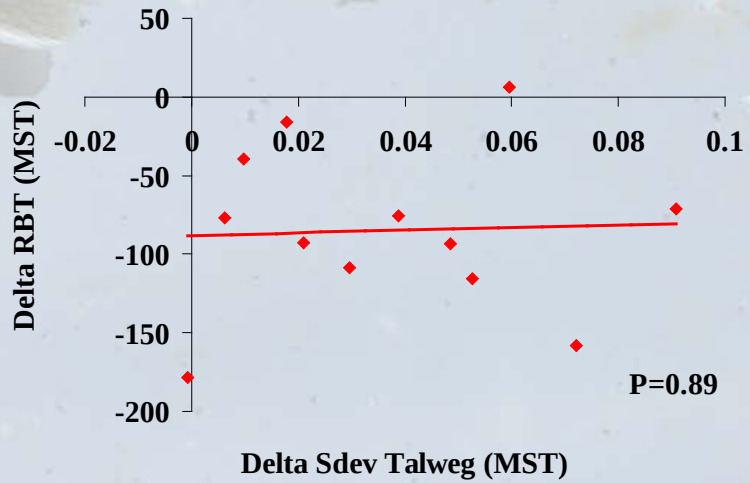
- Increase in Chinook summer parr (3/4 comparisons; ¼ significant)
- Decreased RBT abundance in treatments (6/6 comparisons show declines; 4/6 significant)
- Decreased RBT biomass in treatments (5/6 were declines; 4/6 significant)
- Decreased combined rearing biomass (SPC+RBT) in treatments (5/6 were declines; 2/6 significant, another P=0.058)
- Declines appear correlated with proximity to Jack Creek

Environmental Correlations

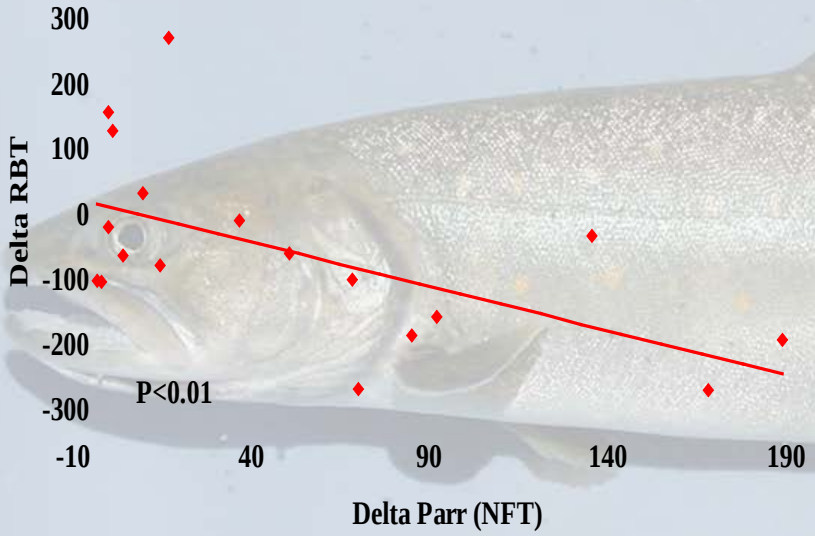


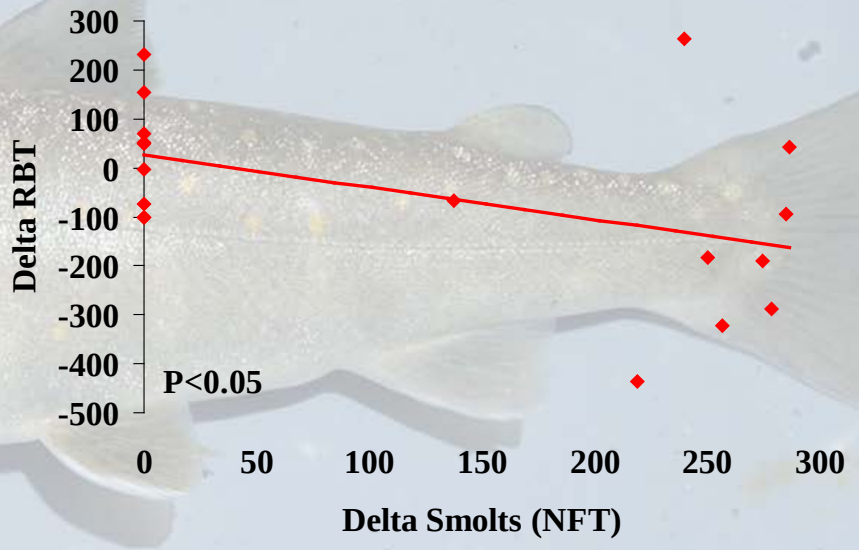


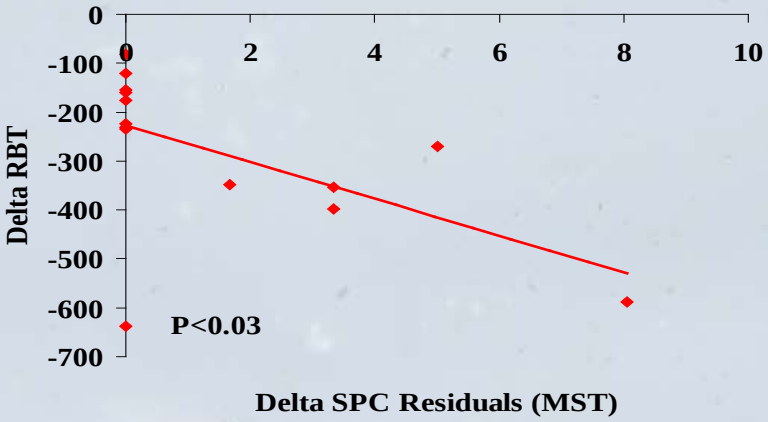




Life Stage Correlations





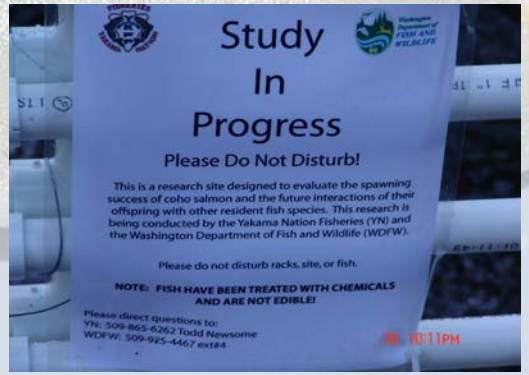


Weight of Evidence

- RBT abundance/biomass, and combined biomass declines in Teanaway treatments relative to controls and observed a “gradient” effect
- Could not detect correlations with environmental variables to explain the RBT abundance/biomass decline
- Correlation analysis suggests a combination of increased rearing parr, smolt, and residualized Chinook density negatively affected RBT in localized areas

2008

- Initiate coho NTT study to evaluate NTT/Coho interactions this summer



- Closely monitor Tributary RBT/SPC interactions
- Closely monitor Main stem RBT/SPC interactions